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## ⑭ 発明の名称 使い捨て失禁処理物品

⑮ 特 願 昭59-52873

⑯ 出 願 昭59(1984)3月19日

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## 明細書

## 1. 発明の名称

使い捨て失禁処理物品

## 2. 特許請求の範囲

- (1) ベンツ部材とその設下区域の内面にベッド部材を組み付けた使い捨て失禁処理物品であつて、次の事項を含むことを特徴とするもの。
- a. 前記ベンツ部材は、厚さ0.6~6mmの軟質発泡シートの少なくとも片面に不織布を重ね合せてこれらを部分的に接着した複合シートからなること。
- b. 前記ベッドは、少なくとも吸液性コアとその表面を被覆する透液性シートとからなること。
- (2) 前記ベンツ部材は、クエスト回りの両側部を分離不能に接着してある特許請求の範囲第1項記載の使い捨て失禁処理物品。
- (3) 前記ベンツ部材は、クエスト回りの両側部を分離し、その両側部にはこれを着用時に遮断するための部材を設けてある特許請求の範囲第1項記載の使い捨て失禁処理物品。

(4) 前記軟質発泡シートは、その気泡とは別に直徑1~10mmの孔を開口面積比率3~60で設けてある特許請求の範囲第1項記載の使い捨て失禁処理物品。

(5) 前記複合シートは、前記軟質発泡シートをその面方向へ拡張した状態で前記不織布を接着してある特許請求の範囲第1項記載の使い捨て失禁処理物品。

(6) 前記軟質発泡シートに対する前記不織布の接着は、超音波溶接によりなしてある特許請求の範囲第1項記載の使い捨て失禁処理物品。

(7) 前記クエスト回りの両側の接着は、超音波溶接によりなしてある特許請求の範囲第2項記載の使い捨て失禁処理物品。

(8) 前記複合シートは、撥水処理してある特許請求の範囲第1項記載の使い捨て失禁処理物品。

(9) 前記ベンツ部材の設下区域面積または/またはクエスト回りに伸縮弾性帶域を設けてある特許請求の範囲第1項記載の使い捨て失禁処理物品。

## 3. 発明の詳細な説明

## 特開昭60-194947 (2)

本発明は、失禁者の使用に供する使い捨て失禁処理物品に関する。

従来、一般に、失禁には公知のむつ、特に使い捨てむつが多用されているが、かかるむつは身体に対する適合密着性、着用者の運動に対応して伸縮する追随性、通気性、着用感が悪く、しかも嵩張つて体へも悪いといつたことがあり、そのため特に歩行可能で外出するような失禁者には不向きであるといふ欠点がある。

本発明の目的は、主として、前述のような欠点を解消することのできる新規な使い捨て失禁処理物品を提供することにある。

本発明の物品1は、第1図、第2図、第5図に示すようにパンツ部材2とその股下区域の内側に組み付けたパッド部材3とからなる。パンツ部材2は、第1図に示すように予め完全なパンツ型に形成したもの。すなわち、ウエスト回り両側を予め分離不能に、好きしくは超音波溶着により接合したものと。第2図に示すようにウエスト回り縫合縫の両側を分離し、一方のウエスト回り縫の両

側に公知の遮離部材4、たとえば、糸材から先端に保止機能を有する絞糸状突起が多数突出したテープ状ファスナー、粘着テープ、ボタン、紐等を設け、これを着用時に他方のウエスト回りの両側に固定してパンツ型に組み立てるものとを含む。

パンツ部材2は、第3図、第4図に示すようにポリウレタンなどの軟質発泡シート5の外側をしくは内側または両面に、防水性または/又および透水性機能の好みしくはノーバインダー不織布6を重ね合せ、両者を好みしくは超音波溶着により部分的に接合した複合シート7からなり。符号8はその接合部を示す。複合シート7は、その伸縮性を高めるため、発泡シート5を一方向または両方向に延伸した状態で不織布6を重ね合せて一体化することが好きしく、また必要に応じて、体液の防漏性を高めるため、シリコン系などの公知接着剤で処理される。この処理は、少なくとも不織布6に対してなされればよく、また不織布6が透水性機能からなる場合にはなされなくともよい。発泡シート5は、その透気性を高めるため、その気

泡とは別に多数の孔を設けることが好みしく、その大きさは発泡シート5を封緘する場合その半にもよるが、1~10mm、さらには2~5mmが好みしく、その端口面積比縮は3~50%、さらには10~20%が好みしい。

パンツ部材2の股下区域両側または/又およびウエスト回りには、第1図、第2図に示すように必要に応じて伸縮弹性帯域り、10を設けることがあり、その場合には、たとえば、発泡シート5と不織布6の当該部位の間に伸縮したゴム・ポリウレタンなどのリボンまたはテープを一体的に介在させるなどの手段が採られる。

一方、パッド部材3は、第5図に示すようにラバーチックフィルムなどの不透性シート11上に粉体パルプなどの吸液性コア12を封緘し、これを不織布などの透液性シート13で被覆してなる。パッド部材3のパンツ部材2に対する接合は、接着剤、超音波溶着、両面粘着テープなどの手段で取扱や使用中に容易に移動不能になされる。

本発明によれば、パンツ部材2の素材である複

合シート7が軟質発泡シート5と不織布6との部分的接合からなり、伸縮柔軟性、通気性、肌触りなど公知のむつに比較して軽く優れるから、所期の目的を達成することができるとともに、着用時の運動などによつても破損することなく、布製パンツとはほぼ同等の機能を有する。さらにパッド部材3は、パンツ部材2の股下区域内側に固定的に組み付けられるとともに、パンツ部材2の身体に対する適合密着機能により、着用者の股下区域は常に固定的に当接されることになるから、パッド部材3に拘束された体液が漏れることがない。またパンツ部材2のパッド部材3に対する組み付け手段が両面粘着テープなどの封緘可能なものであり。しかもパンツ部材2がその着用により体液で汚染しないような場合には、故パンツ部材に新しいパッド部材3を組み付けて再使用することもできる。

かように本発明の物品によれば、幾多の利点があり、失禁者、特に外出可能な失禁者が利用するものとして実用に供しきむめて有益である。

特開昭60-194947 (3)

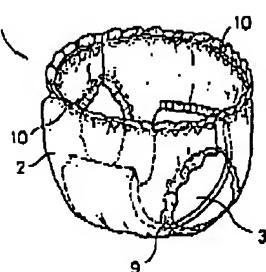
## 4. 図面の簡単な説明

第1図は予めバンク型に形成した本発明物品の斜視図、第2図は着用時にバンク型に組み立てる本発明物品の展開平面図、第3図は発泡シートの片面に不織布を接着して形成した複合シートの部分斜視図、第4図は発泡シートの両面に不織布を接着して形成した複合シートの部分斜視図、第5図は第2図X-X線断面図である。

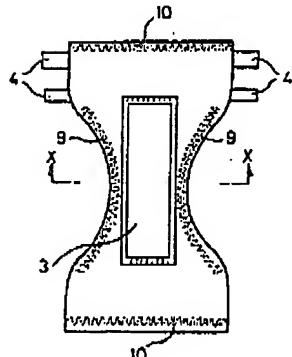
1 . . . 物品	2 . . . バンク部材
3 . . . パット部材	4 . . . 透湿部材
5 . . . 発泡シート	6 . . . 不織布
7 . . . 複合シート	8 . . . 接着部
9,10 . . . 印刷弹性布地	11 . . . 不透湿性シート
12 . . . 透湿性コア	13 . . . 透湿性シート

代理人弁理士 白 滉 吉 治

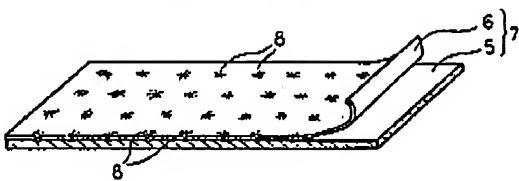
第1図



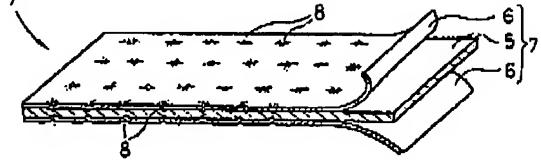
第2図



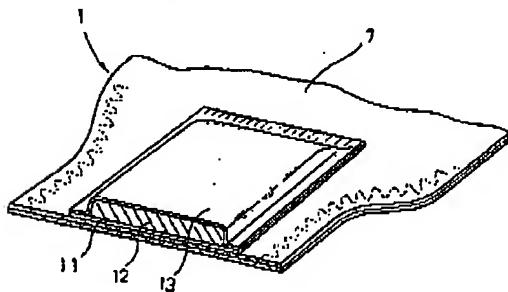
第3図



第4図



第5図



**EVIDENCE B-4**

Patent Laid-Open Publication No. 60 - 194947

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Patent Application No. 59-052873

Filing Date: March 19, 1984

Assignee: Unicharm Corporation

**SPECIFICATION****TITLE OF THE INVENTION**

DISPOSABLE INCONTINENT TREATMENT ARTICLE

**[CLAIMS]**

1. A disposable incontinent treatment article comprising a pant member and a pad member attached on the inner surface of a crotch zone of said pant member, wherein:
  - a. said pant member includes a composite sheet formed by superimposing a nonwoven fabric on at least one of the opposite surfaces of a soft foamed sheet having a thickness of 0.6 to 6 mm, and partly joining them together; and
  - b. said pad includes at least a liquid-absorbent core and a liquid-pervious sheet covering the surface of said liquid-absorbent core.
2. The disposable incontinent treatment article as defined in claim 1, wherein said pant member has opposite sides located around a waist zone therof, each of said sides being joined inseparably.
3. The disposable incontinent treatment article as defined in claim 1, wherein said pant member has opposite sides located around a waist zone thereof, each of said sides being designed to separate said waist zone and provided with a member for joining the separated waist

zone together when worn.

4. The disposable incontinent treatment article as defined in claim 1, wherein said soft foamed sheet is formed with an opening having a diameter of 1 to 10 mm at an opening area ratio of 3 to 60 %, in addition to gas cavities in said soft foamed sheet
5. The disposable incontinent treatment article of claim 1, wherein said nonwoven fabric of said composite sheet is joined to said soft foamed sheet while extending said soft foamed sheet in a direction of the surface thereof.
6. The disposable incontinent treatment article of claim 1, wherein the joining of said nonwoven fabric to said soft foamed sheet is performed through an ultrasonic fusion process.
7. The disposable incontinent treatment article of claim 2, wherein the joining of said opposite sides around said waist zone is performed through an ultrasonic fusion process.
8. The disposable incontinent treatment article of claim 1, wherein said composite sheet is subjected to a water-repellent treatment.
9. The disposable incontinent treatment article of claim 1, which includes a stretchable elastic marginal region on each of the opposite sides of the crotch zone and/or around the waist zone of said pant member.

#### **[DETAILED DESCRIPTION OF THE INVENTION]**

The present invention relates to a disposable incontinent treatment article for incontinent persons.

Generally, a conventional diaper, particularly disposable diaper, has been often used in incontinent protection. However, such a diaper is poor in conformable fit to the body, compliance based on stretchability in response to motions of a wearer, breathability, and

snugness/comfort. Moreover, the diaper is bulky to cause poor appearance, and thereby unsuitable, particularly, for an incontinent person who can walk and go out.

It is a primary object of the present invention to provide a novel disposable incontinent treatment article capable of solving the aforementioned problems.

As shown in FIGS. 1, 2 and 5, an article 1 of the present invention comprises a pant member 2 and a pad member 3 attached onto the inner surface of a crotch zone of the pant member. The pant member 2 includes one type as shown in FIG. 1 which is formed in a complete pant configuration in advance, or has opposite sides each located around a waist zone thereof and joined inseparably, preferably, through an ultrasonic fusion process, and another type as shown in FIG. 2 which has opposite sides each located around a waist zone thereof and designed to separate the waist zone into two, and includes a conventional connection member 4, such as a tape-shaped fastener having a base and a number of fiber-like protrusions each formed with a top end having an engagement function, an adhesive tape, a button or cord, which is provided on each of the sides of one of the separated waist zones and adapted to be fastened to a corresponding one of the sides of the other separated waist zone so as to form a pant configuration.

As shown in FIGS. 3 and 4, the pant member 2 includes a composite sheet 7 formed by superimposing a nonwoven fabric 6, preferably a non-binder nonwoven fabric, made of hydrophilic and/or hydrophobic fibers, on either one or both of the outer and inner surfaces of a soft foamed sheet 5 made, for example, of polyurethane, and partly joining them together, preferably through an ultrasonic fusion process. The reference numeral 8 indicated the joined portion. Preferably, in order to provide enhanced stretchability of the composite sheet 7, the composite sheet 7 is integrally formed by superimposing the nonwoven fabric 6 on the foamed sheet 5 while extending the foamed sheet 5 in one or two directions. Further, according to need, the composite sheet 7 is subjected to a treatment using a conventional water-repellent agent, such as silicon-based water-repellent, to provide an enhanced performance of preventing the leakage of bodily fluid. This treatment may be applied to at least the nonwoven fabric 6, and may be omitted if the nonwoven fabric 6 is formed of hydrophobic fibers. In order to provide enhanced breathability, the foamed sheet 5 is preferably formed with a number of openings in addition to

gas cavities therein. While a desired size of each of the openings is varied depending on the extension ratio of the foamed sheet 5 if it is extended, the size is preferably in the range of 1 to 10 mm, more preferably 2 to 5 mm, and the opening area ratio is preferably in the range of 3 to 60%, more preferably 10 to 20%.

As shown in FIGS. 1 and 2, according to need, a pair of stretchable elastic marginal regions 9, 10 may be formed on the opposite sides of the crotch zone and/or around the waist zone of the pant member 2. In this case, the stretchable elastic marginal regions is formed, for example, by integrally interposing a stretched ribbon or tape made of polyurethane or the like between the respective contact surfaces of the foamed sheet 5 and the nonwoven fabric 6.

As shown in FIG. 5, the pad member 3 is formed by laminating a liquid-absorbent core 12 made of crushed pulp or the like on a liquid-impervious sheet 11 such as a plastic film, and covering the absorbent core 12 with a liquid-pervious sheet 13 such as a nonwoven fabric. The joining of the pad member 3 to the pant member 2 is performed by means of adhesive, ultrasonic fusion, pressure-sensitive adhesive double-coated tape or the like to preclude the pad member from easily moving during use.

According to the present invention, the composite sheet 7 serving as a base material of the pant member 2 is formed of the soft foam sheet 5 and the nonwoven fabric 6 which are partly joined together. Thus, the pant has significantly excellent stretchability/flexibility, breathability and skin feeling as compared with conventional diapers to achieve an intended purpose, and approximately the same function as that of a cloth pant without any damage during physical exercise or the like of a wearer. In addition, the pad member 3 is fixedly attached on the inner surface of the crotch zone of the pant member 2, and statically kept in contact with the crotch zone of a wearer in accordance with a function of the pant member 2 capable of being conformably brought into close contact with the body. This prevents the leakage of a bodily fluid discharged to the pad member 3. In addition, the attaching means of the pant member 2 to the pad member 3 is a releasable means, such as pressure-sensitive adhesive double-coated tape. Thus, if the pant member 2 is not stained by bodily fluid when worn, it may be reused by attaching a new pad member 3.

As mentioned above, the article of the present invention has various advantages, and can be

practically used as a garment for an incontinent person, particularly an incontinent person who can go out, with significant benefits.

#### [BRIEF DESCRIPTION OF THE DRAWINGS]

FIG. 1 is a perspective view of an article of the present invention which is formed in a pant configuration in advance.

FIG. 2 is a developed top plan view of the article of the present invention to be assembled in a pant configuration when worn.

FIG. 3 is a fragmentary perspective view of a composite sheet formed by joining a nonwoven fabric onto one of the opposite surfaces of a foamed sheet.

FIG. 4 is a fragmentary perspective view of a composite sheet formed by joining a nonwoven fabric onto each of the opposite surfaces of the foamed sheet.

FIG. 5 is a sectional view taken along the line X-X in FIG. 2.

1: article	2: pant member
3: pad member	4: connection member
5: foamed sheet	6: nonwoven fabric
7: composite sheet	8: joined portion
9, 10: stretchable elastic marginal region	11: liquid-impervious sheet
12: liquid-absorbent core	13: liquid-pervious sheet

## TRANSLATION FROM JAPANESE

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(54) Title of the Invention: Disposable incontinence article  
(21) Application No. 59-52873  
(22) Filing Date: Mar. 19, 1984

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(72) Inventor: NOZAKI Satoru  
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SPECIFICATION

## 1. Title of the Invention

Disposable incontinence article

## 5 2 Claims

- (1) Disposable incontinence article comprising a pant member, and a pad member attached to the inside face thereof in the crotch portion.
- (2) Disposable incontinence article according to claim 1 wherein:
  - a. said pant member comprises a composite sheet of soft, expanded sheeting 0.6 -6 mm in thickness having nonwoven fabric juxtaposed and partially bonded to at least one face thereof; and
  - b. said pad comprises at a minimum an absorbent core and liquid pervious sheeting covering the surface thereof.
- (3) Disposable incontinence article according to claim 1 wherein said pad member separates the two side portions of the waistband, and the side portions comprise members for fastening these during wear.
- (4) Disposable incontinence article according to claim 1 wherein said soft, expanded sheeting has in addition to the cells thereof 1 -10 mm holes representing an open area of from 3 to 60%.
- (5) Disposable incontinence article according to claim 1 wherein said composite sheet has said soft, expanded sheeting bonded in a planar-dilated state to said nonwoven fabric.
- (6) Disposable incontinence article according to claim 1 wherein bonding of said nonwoven fabric to said soft, expanded sheeting is accomplished by ultrasonic welding.
- (7) Disposable incontinence article according to claim 1 wherein bonding of said two sides of the waistband is accomplished by ultrasonic welding.
- (8) Disposable incontinence article according to claim 2 wherein said composite sheet is water repellency treated.
- (9) Disposable incontinence article according to claim 1 wherein said pant member has stretch elastic band zone on both sides of the crotch portion thereof and/or the waistband thereof.

### 3. Detailed Description of the Invention

The present invention relates to a disposable incontinence article for use by  
5 incontinent individuals.

To date, known art diapers, and particularly disposable diapers, are widely used for  
incontinence, but such diapers have a number of drawbacks making them unsuited to  
incontinent individuals (particularly ambulatory ones), such as poor fit to the body,  
inability to stretch so as to conform to bodily movement of the wearer, poor breathability  
10 and comfort, bulkiness, and poor [illegible].

It is therefore a principal object of the present invention to provide a novel  
15 disposable incontinence article that overcomes the aforementioned drawbacks.

As shown in Figs. 1, 2 and 5, article 1 of the invention comprises a pant member 2  
and a pad member 3 attached to the inside face thereof in the crotch portion. Pant  
20 member 2 may be provided [as an article] joined together in advance, preferably by  
ultrasonic welding, so as to produce a finished pant configuration, i.e. with the two sides  
of the waistband inseparable, as shown in Fig. 1; or with the two sides of □□□□ [sic;  
meaning unclear] the waistband separated, as shown in Fig. 2, one side of □ [sic] the  
waistband being provided with fastening members 4, for example, tape fasteners having a  
multitude of fiber-like projections with fastening function projecting from a base material,  
or pressure sensitive adhesive tapes, buttons, cords or similar arrangements, these being  
anchored to the other side of the waistband when putting the article on, to assemble it into  
a pant configuration.

As shown in Figs. 3 and 4, pant member 2 comprises a soft, expanded sheet 5 of  
25 polyurethane or the like, on whose inner face, outer face, or both is juxtaposed preferably  
"no-binder" nonwoven fabric 6 composed of hydrophilic and/or hydrophobic fibers, the  
two materials being spot bonded together, preferably by ultrasonic welding, the bonded  
portions being indicated by symbols 8. To enhance the stretch properties of composite  
sheet 7 it is preferable for expanded sheet 5 to be dilated in one or both directions when  
30 juxtaposed to and unified with nonwoven fabric 6; leak resistance against bodily fluids may

be enhanced through optional treatment with a known art water repellent, such as a silicone based product. At a minimum it will be sufficient to treat the nonwoven fabric 6; where nonwoven fabric 6 is already composed of hydrophobic fibers, [treatment] will not be necessary. In preferred practice, expanded sheet 5 is provided with a multitude of 5 holes, separate from the cells [in the material], the size of which will differ with the extent [of dilatation] where the expanded sheet 5 is dilated, but is generally from 1 to 10 mm, preferably 2 to 5 mm, with the open area thereof being from 3 to 60%, preferably 10 to 20%.

10 Optionally, stretch elastic band zones 9, 10 may be provided on both sides of the crotch portion and/or the waistband of pant member 2 as shown in Figs. 1 and 2, which may be accomplished, for example, by integrally interposing ribbon or tape of rubber, polyurethane etc. between the expanded sheet 5 and the corresponding portions of the nonwoven fabric 6.

15 Pad member 3, on the other hand, is composed of an absorbent core 12 of milled pulp or similar material stacked on a liquid impervious sheet 11 of plastic film or other such material, and covered with a liquid pervious sheet 13 of nonwoven fabric or the like, as shown in Fig. 5. Bonding of pad member 3 to pant member 2 may be accomplished by means such as adhesives, ultrasonic welding, double-sided pressure sensitive tape or the like, to readily render it immobile during handling and use.

20 According to the present invention, the composite sheet 7 which is the base material of the pant member 2 is produced by partial bonding of soft, expanded sheet 5 and nonwoven fabric 6, and is therefore markedly superior to known diapers in terms of stretch pliability, breathability and feel to the skin. These objectives are achieved without the risk of rupture due to movement during wear, providing functionality similar to that of 25 cloth pants. Additionally, the pad member 3, by virtue of secure attachment to the inside face of the pant member 2 in the crotch portion, as well as the close fit of the pant member 2 to the body, is maintained in fixed contact with the crotch area of the wearer, so that excreted liquid does not leak from the pad member 3. The means for attaching the pant member 2 to the pad member 3 is double-sided pressure sensitive tape or other such

releasable means, and as long as the pant member 2 has not been soiled by liquid in the course of wear, a new pad 3 may be attached to the pant member, allowing it to be reused.

The article of the invention set forth herein affords a number of advantages, making it advantageous for wear by incontinent individuals, particularly ambulatory incontinent individuals.

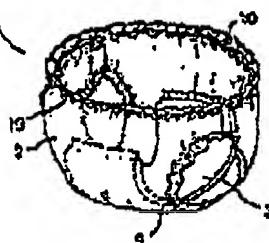
**4. Brief Description of the Drawings**

Fig. 1 is a perspective view of an article of the invention preformed into a pant configuration; Fig. 2 is a development plan view of an article of the invention for assembly into a pant configuration; Fig. 3 is a fragmentary perspective view of a composite sheet comprising nonwoven fabric bonded to one side of an expanded sheet; Fig. 4 is a fragmentary perspective view of a composite sheet comprising nonwoven fabric bonded to both sides of an expanded sheet; and Fig. 5 is a sectional view taken along line X-X in Fig. 2.

10	1 ... article	2: pant member
	3 ... pad member	4: fastening members
	5: expanded sheet	6: nonwoven fabric
	7: composite sheet	8: bonded portions
	9, 10: stretch elastic band zones	11: liquid impervious sheet
15	12: absorbent core	14: liquid pervious sheet

Agent: SHIRAHAMA Yoshiharu, Patent Attorney

Fig. 1



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Fig. 2

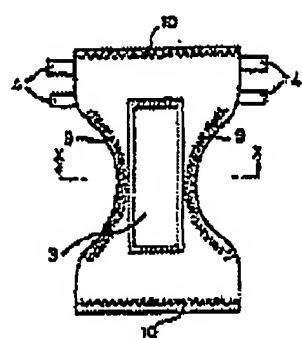


Fig. 3

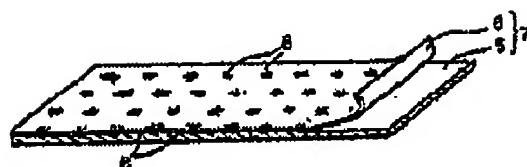
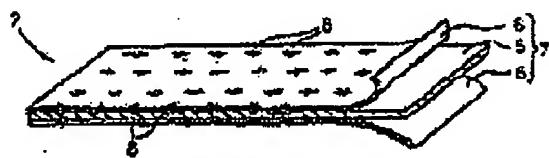
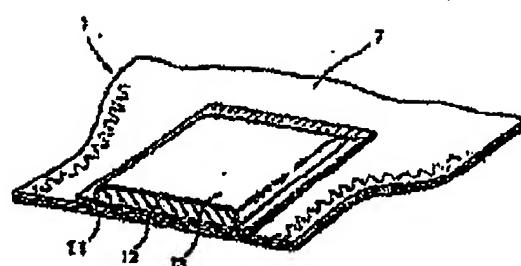


Fig. 4



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Fig. 5



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